

**MEMORANDUM**  
**VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY**  
West Central Regional Office

3019 Peters Creek Rd.

Roanoke, VA 24019

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SUBJECT: Meeting Minutes, New River PCB Source Search Citizens' Committee

TO: Committee Members

FROM: Jay Roberts, DEQ-WCRO

DATE: May 2, 2003

COPIES: John Copeland, DGIF; Jean Gregory, DEQ; Michael Scanlan, DEQ

The third meeting of the New River Polychlorinated Biphenyls (PCB) Source Search Citizens' Committee was held on Thursday, September 26, 2002, at the New River Valley Competitiveness Center. Twelve people attended the meeting, including presenters, and six persons signed-in.

Rick Roth, Chair, started the meeting by asking that committee members and the public introduce themselves. Members attending were David Bernard, Phil Lockhard, Charles Maus, and Rick Roth. Darliet Colley, W. Tom Miller, Llyn Sharp, Sean Hash and Ron Powers were not present.

Dr. Roth asked if committee members had any comments on the minutes from the June 20, 2002, meeting. Hearing no comments, committee members voted to approve the minutes.

Dr. Roth requested that Jay Roberts, DEQ, update members on the status of hiring a PCB Inspector. It was indicated that a PCB Inspector would not be hired due to the current status of the state budget and existing DEQ staff would perform investigations necessary to further the committee's efforts. There was discussion of the need for DEQ staff to contact Virginia Tech to see if a student internship or class project could be arranged to assist in assessment work.

Dr. Roth requested that Jay Roberts, DEQ, proceed with the presentation entitled "New River PCB Data Update: Fish Tissue and Sediments." A copy of the presentation is attached to the minutes. As a companion to the presentation, a copy of 2001 fish tissue sample results, 2001 sediment sample results, draft 2002 303(d) Fact Sheet, and letter from the Virginia Department of Health dated September 17, 2002, was provided to members and the public. The VDH letter indicated that based upon its review of the 2001 fish tissue data, the carp consumption advisory would not be extended upstream of the Route 114 (Peppers Ferry Road) bridge. It was noted that the results for 11 sediment samples collected in 2001 by DEQ, West Central Regional Office, were not available at the time of the third committee meeting. The results will be provided to members as soon as they become available. DEQ will be collecting 14 additional sediment samples authorized by the committee at its June meeting in Fall, 2002.

**New River PCB Source Search Citizens' Committee**  
**Final Meeting Minutes -- 3<sup>rd</sup> Meeting**  
**Page 2 of 2**

Numerous questions were asked in the course of the presentation; questions and answers are summarized in Attachment A.

At the conclusion of presentations, members discussed the data and how that should lead future investigations. A summary of recommendations follows:

- DEQ staff should contact Virginia Tech to see if a student internship or class project can be arranged to assist in assessment work since a PCB Inspector will not be hired to support the investigation. The PCB Inspector position description could be used as a model for developing an internship task description.
- DEQ staff should obtain and analyze 2001 sediment results and use the 2001 data to target 2002 sediment sampling points. It was noted that we might not need to analyze certain 2002 sediment samples if we have confirmed presence of PCBs at sample stations listed for 2002 collections.
- DEQ staff should investigate potential methods for conducting semi-quantitative soil tests to screen sites for the presence of PCBs. It was noted that DEQ would need to conduct more sophisticated and expensive sampling to confirm presence of PCBs where semi-quantitative methods indicate the potential presence of PCBs. It was noted that if soil levels greater than 50 ppm are found on a site, DEQ would request that the owner inform EPA of the findings.
- DEQ staff should interview people in each city, town, and county government on the New River about past land use practices in the community. Contact local planning staff, utility department staff, electrical department staff, etc., for historic information about activities that may have involved the use or disposal of materials and equipment that may have contained PCBs.
- DEQ staff should distribute survey forms to current operations in the target watershed. Some industries are already reviewing old records, and the survey will prompt further action on the part of industry to review historical operating records.
- DEQ staff should contact EPA and other state agencies about possible PCB sources in the study area, including obtaining information about landfills, potential superfund sites, hazardous waste cleanups, etc. Staff should go to the EPA "enviromapper" website as that references a fairly comprehensive database on municipal and industrial activities in the U.S.

It was decided that a fourth meeting be scheduled at a later date. Potential meeting topics include an update on any of the above listed items. The meeting adjourned at this point.

**New River PCB Source Search Citizens' Committee**  
**Third Meeting -- September 26, 2002**  
**Attachment A -- Questions and Answers**

**Q1: What do we know about carp and their movement patterns in the New River?**

A: Jon Copeland, DGIF, responded that according to Dr. Robert Jenkins and Noel Burkhead's species account in their book, *Freshwater Fishes of Virginia*, carp are known to move extreme distances of 1,000 river kilometers or more during spring spawning migrations, but most carp do not appear to move much. Jenkins and Burkhead cite Carlander, K.D., 1969 (Handbook of freshwater fishery biology, volume 1. Iowa State University Press, Ames.) and Becker, G.C., 1983 (Fishes of Wisconsin. University of Wisconsin Press, Madison.) as references on this aspect of carp biology. While I did not consult these resources directly, my expectation of carp movements in the New River is that they would likely be minimal, since spawning habitat should be fairly abundant along the stretch of river where the advisory is in place. However, without specific studies of the carp population in the New River, it is not possible to say for sure.

**Q2: Why are carp showing more evidence of contamination than other fish? It was noted that in other studies in other states, PCBs are usually concentrated in predatory fish, as well as carp.**

A: Carp have a higher body fat content and are usually live longer than predators. PCBs bioaccumulate in fatty tissue and carp are usually about 10% fat, compared to less than 1% fat in predatory fish. Older carp have many years in which to bioaccumulate PCBs, while predators are usually feeding on younger fish, which may not have had enough time to accumulate enough PCBs to high enough levels for it to be transferred up the food chain to the predators. Carp are also bottom feeders, which tends to directly expose individuals to the sediments of the New River where it is expected that a significant portion of the PCB reservoir is located.

**Q3: Is the Radford site on New River where the 300 ppb PCB in sediment result obtained located below Connellys Run? It was noted that historically transformers may have been stored at the City of Radford Electric Department, and there was an incinerator on Connellys Run near its discharge to the New River.**

A: Yes, the sediment collection site is located approximately 1.0 mile below Connellys Run in the vicinity of the City of Radford's former wastewater treatment plant discharge.

**Q4: Have potential PCB sources located above Claytor Dam been eliminated as potential sources of PCBs in the New River below the dam? It was noted that American Electric Power maintained a transformer storage area in the Town of Pulaski. It was also noted that, historically, PCBs might have been used in the Ivanhoe area.**

**Questions and Answers**  
**Third Meeting, September 26, 2002**  
**Page 2 of 4**

A: Claytor Dam functions as a large sediment trap and sands and silts transported into Claytor Lake by the New River settle out in at the upstream end of the lake. The highest PCB level in sediment collected in Claytor Lake is 1.86 ppb at river mile 105.05 at Hiawassee at the upper end of the lake. Clays may be transported further down in the lake, but probably have a fairly long residence time in the Claytor Lake with opportunity to settle before discharging below Claytor Dam. The presence of PCBs in Peak Creek, which discharges to Claytor Lake approximately six miles upstream of the dam, have been documented. Additional sediment samples have been and will be collected above the City of Radford in the years 2001 and 2002. It is hoped that these collections will provide additional information on the potential for Claytor Lake discharges to contribute PCBs to New River below the dam.

**Q5: Are there any sediment transport studies for the upper New River Basin?**

A: Not that DEQ is aware of, but we will look for studies conducted by USGS, ACOE, and perhaps AEP that will help us understand the potential for PCB transport through the lake to the lower New River.

**Q6: Is there any current, ongoing PCB discharge to New River?**

A: It is expected that the majority of PCBs reached the New River in the 1940's through 1970's when the chemical was not closely regulated. The Toxic Substances Control Act (1976) banned all U.S. PCB manufacture beginning in 1978, and all uses were banned in 1984, except for small capacitors made before 1978. It is not thought that industries are currently discharging PCBs to the river.

**Q7: If there are not any current sources, why doesn't DEQ go to the old industrial sites and test for the presence of PCBs?**

A: That is the next step anticipated with this study. DEQ will develop a list of potential sources and conduct needed follow-up investigations. Fish data and sediment data alone will probably not pinpoint specific sources of PCBs.

**Q8: Are old landfills a problem; could citizen input help with locating old dump sites?**

A: Municipal and industrial landfill sites are one of the types of activities that will be investigated as a potential source of PCBs.

## Questions and Answers

Third Meeting, September 26, 2002

Page 3 of 4

**Q9: Is there any interest in seeps that just come up out of the ground or on the banks of the river?**

A: PCBs may move with groundwater to the New River, but it should be remembered that PCBs are only sparingly soluble in water. PCBs tend to bind to organic matter and clays. Once bound to earthen materials, the primary transport mechanism would be by sediment transport. Any local knowledge that can help with locating potential PCB sources is welcome and one of the reasons the committee was formed.

**Q10: Could former railroad activities be a potential source of PCBs to New River?**

A: Possibly. As noted by members, we have received reports of transformers being dumped in the river, engine maintenance occurring on the New River at Eggleston, storage of oil drums in the right of way, use of grease to lubricate axles on engines and cars. Again, any local knowledge that helps with locating potential PCB sources is welcome.

**Q11: Can we pinpoint a source once a potential discharge area is located?**

A: Through on-site soil and sediment testing, we can identify probable historical sources of PCBs. It is possible that PCBs are originating from nonpoint sources, and we will investigate potential nonpoint source contributions of PCBs to New River. Erosion of land areas where PCBs have historically collected due to leaks, spills, disposal, etc., may constitute a current nonpoint source contribution of PCBs to the New River and we propose evaluating such areas as part of the source investigation.

**Q12: Do PCBs bind to soil?**

A: Yes. Analytical Chemistry of PCBs (Erickson, 1997) states, "PCBs tend to favor a non-polar phase and will partition away from water in most solids; within the solids, the organic portion is the preferred home for a PCB molecule." It is also noted that the distribution of PCBs in soil tends to be proportional to the soil organic matter content. For the more highly chlorinated PCB congeners, desorption of PCBs from soils or sediments may be on the order of months or years. Erickson also cites 1981 information that estimates that approximately 99% of the mobile environmental reservoir of PCBs may be found in soil, sediment, or vegetation.

**Questions and Answers**  
**Third Meeting, September 26, 2002**  
**Page 4 of 4**

**Q13: Has DEQ contacted potential sources or sent out survey forms we discussed in the last meeting?**

A: No, we first need to develop the potential source list and then contact owners on the list. We are now at that phase of the investigation. Once the potential source list is developed, we will contact owners who are still in business about past PCB use histories.

**Q14: How do PCBs get into the New River?**

A: PCBs were commercially produced beginning in 1929 through the mid-1970s and were used in a wide array of industrial, commercial, and residential applications. Most PCB use was in transformers and capacitors. PCBs have entered the environment through various means including PCB spills, handling, and disposal practices. Most releases tend to be localized near the use site, but PCBs have also been gradually distributed into the environment through releases to the air, water. It is noted that resuspension of previously contaminated sediments may be a mechanism by which PCBs remain available to the biota of New River.

**Q15: How many miles of New River are impaired based upon the fish consumption advisory?**

A: 52.08 miles